

sition of fringes which are not uniformly refracted, but which recede from it so gradually, as not to prevent the same mutual compensation, although it is distinguished by other appearances ; and 3rd, that the purity of the colour of the light, in both cases, depends upon its continuity, any interruption of which, although the different portions into which it may be separated are white at the moment the division takes place, produces colours in its further progress, because each portion carries with it the difference of direction required for their development."

A paper was also read, entitled, "Observations on the Reciprocal Influence which Magnetic Needles exercise over each other, when placed at a given distance within their respective Spheres of Action, at different positions on the Earth ; with Tables of numerical Results obtained at separate Stations. Also a method of discovering where certain local influences are acting on the Needle, from which may be obtained a proportional correction to be applied to Magnetic Observations in general." By Edward J. Johnson, Esq., Commander R.N. Communicated by Francis Beaufort, Esq., Capt. R.N., F.R.S.

The author, considering it probable that two or more magnetic needles freely suspended at a certain distance in given positions with respect to each other, would develop certain proportionate deflections determined by their position on the earth, made a set of experiments, with a few common compass needles, at Yarmouth, London, and Clifton, which so far confirmed the truth of his conjecture, as to induce him to fix on stations at a greater distance from one another, and to multiply his observations ; ascertaining, from time to time, that the magnetic powers of his apparatus had undergone no material change. The results of these observations are given in a tabular form.

The author conceives that comparative observations of the amount of deflection produced by one magnet on another, placed in various situations, relative to the meridian, on an horizontal plane, will afford the means of determining the peculiar local influences of the particular situation in which the experiment is made, as distinguished from the general magnetic influence ; because the former will act unequally on each magnet, while the latter acts equally on all.